

WHAT IS CLAIMED IS:

1. A method of inducing a  $T_H1$  polarised immune response to an antigen, comprising parenterally administering to a subject microparticles sized such that at least 50% of the microparticles are less than 5  $\mu m$ , the microparticles comprising the antigen entrapped or encapsulated by a biodegradable polymer.
2. The method of Claim 1, wherein the microparticles are sized such that at least 50% of the microparticles are less than 3  $\mu m$ .
3. The method of Claim 1, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid or enantiomers thereof.
4. The method of Claim 1, wherein the microparticles are formed using a solvent evaporation method.
5. The method of Claim 1, wherein the antigen comprises a *B. pertussis* antigen.
6. The method of Claim 1, wherein the parenteral administration is selected from the group consisting of intraperitoneal administration, subcutaneous administration and intramuscular administration.
7. A method of inducing a  $T_H2$  polarised immune response to an antigen, comprising parenterally administering to a subject nanoparticles sized such that at least 50% of the nanoparticles are less than 600 nm, the nanoparticles comprising the antigen entrapped or encapsulated by a biodegradable polymer.
8. The method of Claim 7, wherein the nanoparticles are sized such that at least 50% of the nanoparticles are less than 500 nm.
9. The method of Claim 7, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid or enantiomers thereof.

10. The method of Claim 7, wherein the nanoparticles are formed using a coacervation method

11. The method of Claim 7, wherein the antigen comprises a *B. pertussis* antigen.

12. The method of Claim 7, wherein the parenteral administration is selected from the group consisting of intraperitoneal administration, subcutaneous administration and intramuscular administration.

13. A method of inducing a combined  $T_H1$  and  $T_H2$  immune response to an antigen, comprising parenterally administering to a subject

- a) the antigen entrapped or encapsulated by a biodegradable polymer to form microparticles sized such that at least 50% of the microparticles are less than 5  $\mu\text{m}$ ;

in combination with

- b) the antigen entrapped or encapsulated by a biodegradable polymer to form nanoparticles sized such that at least 50% of the nanoparticles are less than 600 nm.

14. The method of Claim 13, wherein the microparticles are administered simultaneously, separately, or sequentially with the nanoparticles.

15. A vaccine formulation for enhancing the  $T_H1$  immune response to at least one antigen and adapted for parenteral administration comprising a pharmaceutically acceptable carrier and a pharmaceutically effective amount of microparticles sized such that at least 50% of the microparticles are less than 5  $\mu\text{m}$ , the microparticles comprising the at least one antigen entrapped or encapsulated by a biodegradable polymer.

16. The vaccine formulation of Claim 15, wherein the microparticles are sized such that at least 50% of the microparticles are less than 3  $\mu$ m.
17. The vaccine formulation of Claim 15, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid and enantiomers thereof.
18. The vaccine formulation of Claim 15, wherein the microparticles are formed using a solvent evaporation method.
19. The vaccine formulation of Claim 15, wherein the at least one antigen comprises a *B. pertussis* antigen.
20. The vaccine formulation of Claim 15, wherein the microparticles comprise at least 2 subpopulations of microparticles, each subpopulation comprising a different antigen entrapped or encapsulated by a biodegradable polymer.
21. A vaccine formulation for enhancing the  $T_H2$  immune response to at least one antigen and adapted for parenteral administration comprising a pharmaceutically acceptable carrier and a pharmaceutically effective amount of nanoparticles sized such that at least 50% of the nanoparticles are less than 600 nm, the nanoparticles comprising the at least one antigen entrapped or encapsulated by a biodegradable polymer.
22. The vaccine formulation of Claim 21, wherein the nanoparticles are sized such that at least 50% of the nanoparticles are less than 500 nm.
23. The vaccine formulation of Claim 21, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid and enantiomers thereof.
24. The vaccine formulation of Claim 21, wherein the nanoparticles are formed using a coacervation method.

25. The vaccine formulation of Claim 21, wherein the at least one antigen comprises a *B. pertussis* antigen.

26. The vaccine formulation of Claim 21, wherein the nanoparticles comprise at least 2 subpopulations of nanoparticles, each subpopulation comprising a different antigen entrapped or encapsulated by a biodegradable polymer.

27. A method of providing protective immunity against *B. pertussis*, comprising parenterally administering to a subject a pharmaceutically effective amount of microparticles sized such that at least 50% of the microparticles are less than 5  $\mu\text{m}$ , the microparticles comprising at least one *B. pertussis* antigen entrapped or encapsulated by a biodegradable polymer.

28. The method of Claim 27, wherein the microparticles are sized such that at least 50% of the microparticles are less than 3  $\mu\text{m}$ .

29. The method of Claim 27, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid and enantiomers thereof and wherein the microparticles are formed using a solvent evaporation method.

30. The method of Claim 27, wherein the at least one *B. pertussis* antigen is selected from the group consisting of inactivated pertussis toxin (PTd), filamentous hemagglutinin (FHA), pertactin and fimbriae and combinations thereof.

31. A method of providing protective immunity against *B. pertussis*, comprising parenterally administering to a subject a pharmaceutically effective amount of nanoparticles sized such that at least 50% of the nanoparticles are less than 600 nm, the nanoparticles comprising at least one *B. pertussis* antigen entrapped or encapsulated by a biodegradable polymer.

32. The method of Claim 31, wherein the nanoparticles are sized such that at least 50% of the nanoparticles are less than 500 nm.

33. The method of Claim 31, wherein the biodegradable polymer comprises a copolymer of lactic acid and glycolic acid and enantiomers thereof and wherein the nanoparticles are formed using a coacervation method.

34. The method of Claim 31, wherein the at least one *B. pertussis* antigen is selected from the group consisting of inactivated pertussis toxin (PTd), filamentous hemagglutinin (FHA), pertactin and fimbriae and combinations thereof.